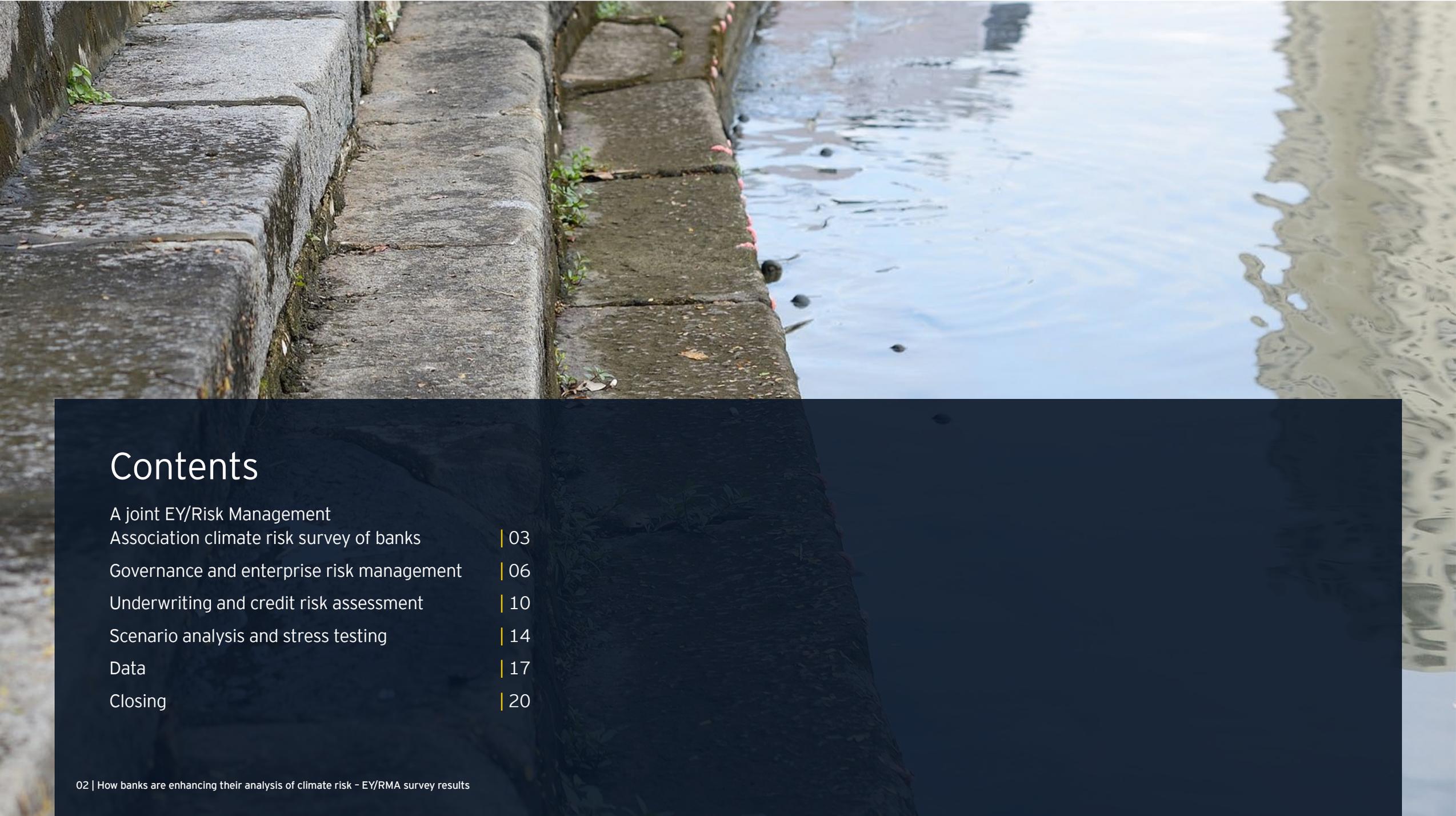




How banks are enhancing their analysis of climate risk - EY/RMA survey results

January 2022





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In the past two years, there has been a significant change in perspective within the banking industry on how it assesses climate risk. It used to be considered, at best, an emerging risk - more for high-carbon-intensive industries than for banks. Even with a large branch network, banks just are not major direct emitters.

However, as central banks, regulators and policymakers have stepped up their focus on climate risks - and on environmental, social and governance (ESG) factors more generally - banks have begun to view climate risks differently. For a start, they recognize the occurrence of more extreme weather events. Changing weather patterns are creating real business continuity challenges for banks and affecting customers, clients, third parties and communities everywhere.

But banks are also now understanding that transition risks - those associated with each sector's transition to a zero-carbon economy - are significant, not just for major emitters but for every industry. This will call on banks to analyze potential risks associated with those transitions and evaluate what it means for their customers' financing needs - on the wholesale and retail side.

With this in mind, Ernst & Young LLP and the Risk Management Association (RMA) performed its first annual climate risk management survey. EY/RMA surveyed 28 banks' chief credit officers last year to get a pulse on how far banks have advanced their efforts to better govern, measure and act upon climate risks. (See page 21 for survey demographics and methodology.)

Key survey findings include:

Governance and risk management are evolving, but the industry hasn't settled on a single model.

Boards of directors are starting to receive reporting on climate risk, but few banks have significantly altered how the board – or its committees – oversees climate risks. This is starting to change, with risk committees taking a bigger role in overseeing the risk group's efforts. Management's approach to firmwide governance is also evolving. Not only are more lines of businesses and functions being pulled in to manage the risks and opportunities, but the risk function is still trying to determine the right roles and responsibilities. As a result, banks are only just starting to embed climate risk into their enterprise risk management (ERM) policy and risk appetite framework (RAF).

Banks are in the early stage of embedding climate risks into underwriting and risk analysis.

Some banks – especially large ones – have started the challenging work of determining what enhancements are required to underwriting and credit risk analysis and ratings. However, few, if any, believe they have gotten to the right level of sophistication.

Climate risk stress testing and scenario analysis pose challenges to the time horizons associated with climate change.

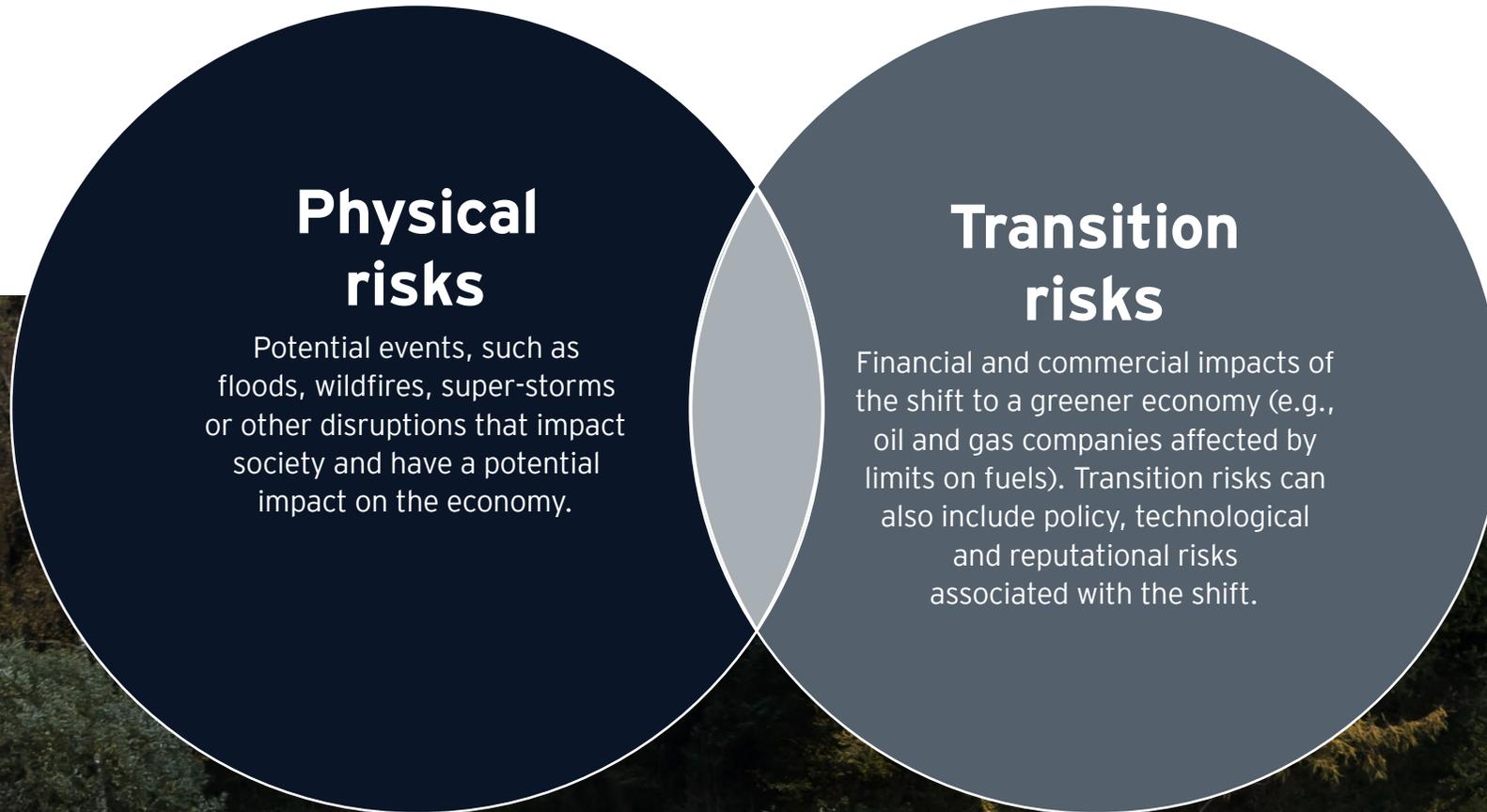
Banks are still in the early stages of adopting climate scenario analysis into their RAF and strategic planning efforts. Less than 36% of those surveyed currently perform climate-related scenario analysis, citing time horizons as a key challenge.

The value of climate risk data is limited by a nascent understanding of how to interpret and apply it to inform decision-making.

Most banks are procuring data from external vendors or evaluating internal data sources to stitch together a cohesive analysis; however, few have developed a comprehensive data strategy.

A new language for climate: physical and transition risks

Climate risks include first-order risks, or physical risks (e.g., heat patterns, flooding), which can manifest in financial loss due to climate-related hazards, and also second-order risks, or transition risks (e.g., change in regulation), which can manifest in unplanned or abrupt changes to business structure.



Governance and enterprise risk management

Governance of climate risk is foundational. Roles and responsibilities at the board and management level need to be well-articulated and implemented to enable proper accountability across the organization, especially for a risk that has such broad consequences across banks. Climate risk also needs to firmly be embedded in the ERM policy and framework.

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It is premature for us to determine a ‘risk appetite’ as we are still building out the risk framework.

Survey respondent

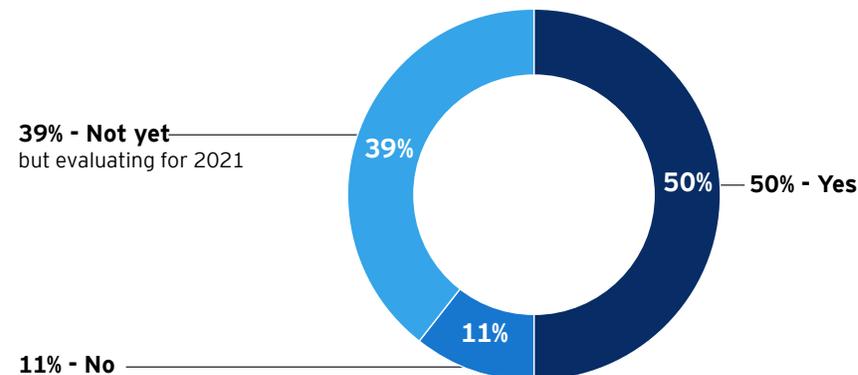
The industry is in transition in these areas

Board oversight is being enhanced, initially through climate-related risk reporting: Overall, half of the surveyed institutions already provide some level of reporting to their board, with 39% evaluating when and how to do so. As of Q1 2021, only 11% are not planning such reporting and those are smaller banks. Larger banks are more advanced, with 80% already reporting, and the remainder evaluating reporting. This accords with an overall evolution that is taking place in bank governance of climate change, and more broadly ESG matters (see [How financial services boards can accelerate sustainable finance | EY - US](#)).

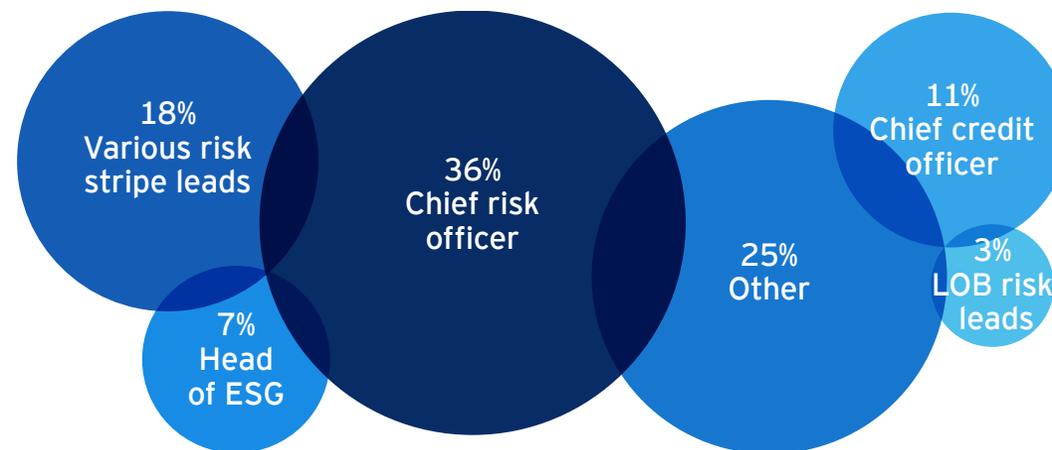
Management structures are still in transition, including in risk: Banks are still working through what their internal target operating model should like. Whereas just a few years ago, ESG and climate-related matters were the domain of chief sustainability officers, now the CRO, CFO, chief compliance officer, line of business leads and many others are involved. As it relates to management ownership of climate risk, no clear operating model has emerged – over half (54%) of surveyed banks have yet to assign ownership to a specific role. Almost a third (29%) of banks that have assigned accountability to an executive have done so as a second, not only, role (i.e., they have a dual-hatted role).

In terms of who leads climate risk within the risk group, the approach varies across banks – just over a third (36%) have given the role to the CRO, with the rest placing it with various roles, including head of ESG and chief credit officer.

Does your board receive reporting on climate-related risk?



If there is no head of climate-related risk, which risk leads have climate risk responsibility?



Banks have not yet embedded climate risk into their ERM policy:

None of the surveyed banks have completed the challenging work in embedding climate risk into their ERM policy. A small minority (15%) have completed some of the necessary integration, but most (79%) acknowledge they are in the early stages.

Banks have progressed efforts to embed climate risk into the risk appetite framework:

Not surprisingly, given the lack of progress on the ERM integration, banks are only in the early stages of embedding climate risk into their RAF: about two-thirds (64%) are in progress of doing so, initially mainly focused on physical risks; roughly a third (29%) have not started. Larger banks are more advanced - 100% have the necessary work in motion. Completing this work will be essential in truly embedding climate risks in day-to-day decision-making. After all, the RAF defines the capital, liquidity or earnings the bank is willing to put at risk related to its strategic objectives and business-planning efforts.

Call to action

- ▶ Banks should assess how climate risk - and ESG, more generally - is overseen by the board and its committees, especially the risk committee.
- ▶ Management should evaluate what climate-risk reporting is being shared with the board/board committee(s), and whether enhancements are needed. To the extent the bank is, or is considering, reporting in line with the Task Force on Climate-related Financial Disclosures,¹ it should consider how it shares such disclosures with the board. The board or

designed board committee should be aware of these disclosures, especially those linked to describing climate-risk governance and specific metrics.²

- ▶ Banks should develop or enhance board training related to climate risk.

¹ <https://www.fsb-tcfd.org/>

² Task Force on Climate-related Financial Disclosures report playbook | EY - Global, https://www.ey.com/en_gl/financial-services-technical-resources/task-force-on-climate-related-financial-disclosures-report-playbook

- ▶ At the management level, banks should assess their cross-functional leadership structures to confirm that all the right lines of businesses and functions are represented. Roles and responsibilities should be clearly defined, including for who owns climate-risk management.
- ▶ Risk teams should accelerate efforts to embed climate risk into the ERM policy. They may find enhancements are needed to the bank's risk taxonomy, especially to accommodate transition risks (physical risks are somewhat easier to embed). Embedding climate risk into the RAF is essential so that everyone is aware of the bank's position on the risks associated with climate change.

Underwriting and credit risk assessment

Ultimately, climate risk needs embedding in underwriting and credit decisioning for it to be linked to the lifeblood of bank decision-making. As with governance and enterprise risk management overall, efforts to link climate and credit are in the early stages.

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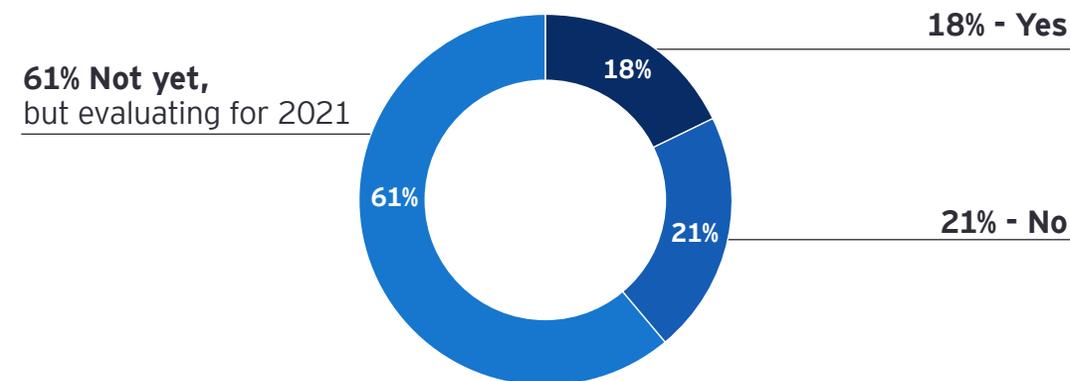
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In managing climate risk, we are taking a client-centric approach to work one-on-one with large accounts.

Survey respondent

- ▶ **Banks are in varying stages of incorporating climate risk in internal risk reporting:** None of the surveyed banks have completed this effort; about the same portion are in the early stages of revamping their internal risk reporting (43%) as are planning to do so (39%). Indeed, almost 20% do not yet plan to change their internal risk reporting to cover climate risk.
- ▶ **Banks are starting to ramp up efforts to include climate risk in underwriting:** Only a small minority (7%) of surveyed banks have already incorporated climate risk into their underwriting process. Most (82%) are starting to look at the changes that are required or plan to do so in the next year.
- ▶ **Banks are starting to embed climate risk into risk credit risk ratings:** Only 18 of the surveyed banks have started to include climate risk in their credit ratings. Of those, most (56%) are doing so using qualitative adjustments. Only a small portion (33%) have developed quantitative approaches. The general level of early maturity can be attributed to banks' own estimation of their own understanding and ability to interpret environmental attributes in the context of credit analysis - 59% consider their approach to be "established" while 37% acknowledge they are "laggards." Only 4% of surveyed banks consider themselves as "advanced" and none view themselves as "leaders."
- ▶ **Banks have done some early analysis on the most affected industries:** Where banks have assessed the sectoral impact of climate change in their wholesale-lending portfolios, they have identified a set of high-carbon-emitting sectors - specifically citing: energy, power generation, metals

Do you incorporate environmental attributes (e.g., ESG ratings, GhG emissions) into credit risk analysis?



and mining, and transportation (automobiles and airlines) as key high-risk industries.

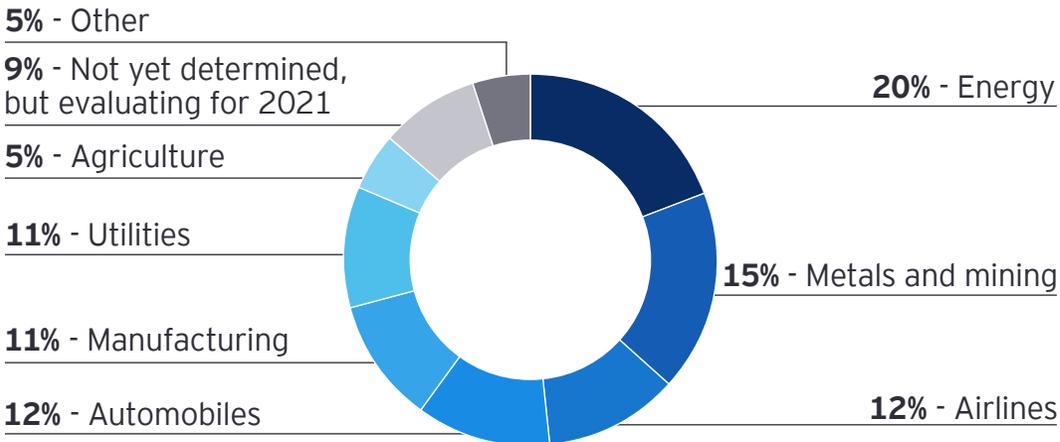
► **Banks are using different approaches to evaluate climate risks in their mortgage portfolio:**

The physical effects of climate change have to be analyzed at a very local level - it matters where rivers run or sea lines are changing. Of the two-thirds of surveyed banks that have started to analyze physical risks in their US mortgage portfolio, 46% are using ZIP codes, 15% are using state- or region-specific factors, and 39% are using flood zones.

► **Emerging approaches to including climate risk into underwriting:**

- Generally, firms are evaluating existing processes to inform their underwriting by:
- Evaluating the use of concentration of climate risk exposure key risk indicators (KRIs) and consideration for risk adjusted return on capital
 - Requesting potential borrowers to provide documentation on collateral residing in vulnerable sectors (i.e., stranded assets) and/or locations (e.g., flood zones)
 - Leveraging AML-type processes to gather additional information and evaluate repositories to store data through enhanced client due diligence
 - Screening loans in carbon-intensive industries for additional credit review
 - Partnering directly with clients in high-emitting sectors to discuss their decarbonization strategy

For the wholesale lending portfolio, which are your high-risk industries?



Some banks are exploring techniques to identify and measure climate risks, including:

- Sourcing ESG ratings and applying a qualitative overlay on existing obligor risk ratings
- Calculating a standalone climate risk rating to supplement the credit rating

More-advanced banks are developing a qualitative climate risk analysis to supplement a borrower risk rating, using multiple factors such as geographic location (including flood and fire zones), carbon-intensive sectors, carbon emissions and the presence of ESG mandates or commitments.

Call to action

- ▶ Banks should assess what enhancements are required to internal risk reporting to include climate risks, especially given that such reporting is already being shared with the board of directors.
- ▶ Banks should evaluate how they can advance efforts to incorporate climate risk into their underwriting and credit rating processes. They should start with physical risks but quickly get to transition risks, especially in the wholesale and small-business banking businesses.
- ▶ Banks should focus their initial attention on the high-carbon-intensive industries and develop hypotheses on how clients in these sectors will need alternative financing arrangements to get to a zero-carbon economy. This will require investments in some fairly sophisticated multi-year analysis (see Scenario analysis and stress testing section, on See page 14).
- ▶ Banks should also assess the climate-related physical risks to residential and commercial real estate. This analysis needs to be done at a granular level to evaluate the growing impact of climate change on properties.



Scenario analysis and stress testing

Banks get paid to take risks, and they use analytical models and methodologies to determine appropriate levels of risk. A key function within the risk organization that will be responsible for understanding and forecasting climate-related impacts is the chief credit officer. However, as with other forward-looking, assumption-driven and regulatory-required exercises, other risk types (e.g., market, operational, liquidity) will play an integral role in designing, constructing and evaluating climate stress tests.

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Lack of consistent standards, resource constraints and limited in-house expertise are key challenges we face in managing climate risks.

Survey respondent

► **Banks are using a variety of scenario data sources:** While there are numerous sources available (e.g., Network for Greening the Financial System (NGFS), International Energy Agency (IEA), and Intergovernmental Panel on Climate Change (IPCC), banks have not agreed upon a consistent approach for their use in climate scenario analysis. According to the banks surveyed, 50% are developing internal climate scenarios and 50% are using vendors to assist with scenario expansion to provide the full suite of model variables needed by downstream financial forecasting models. A key challenge cited by banks is scenario downscaling to provide economic variables at the more granular geographic and sector levels.

Banks acknowledged regulatory exercises as a guide to determine what type of capabilities their models will need, referencing the Bank of England Biennial Exploratory Scenario,³ the French regulators' (ACPR⁴) Climate Exercise, the Hong Kong Monetary Authority⁵ (HKMA) climate risk stress test in 2021, or the European Central Bank⁶ (ECB) climate stress test upcoming in 2022. However, a key theme is the use of NGFS scenarios, which is endorsed by 60+ central banks and supervisors globally. And recently, the acting Comptroller of the Currency, Michael J. Hsu,⁷ described scenario analysis as being a top-down and bottoms-up

³ <https://www.bankofengland.co.uk/stress-testing/2021/key-elements-2021-biennial-exploratory-scenario-financial-risks-climate-change>

⁴ <https://acpr.banque-france.fr/en/scenarios-and-main-assumptions-acpr-pilot-climate-exercise>

⁵ <https://www.hkma.gov.hk/eng/>

⁶ <https://www.ecb.europa.eu/home/html/index.en.html>

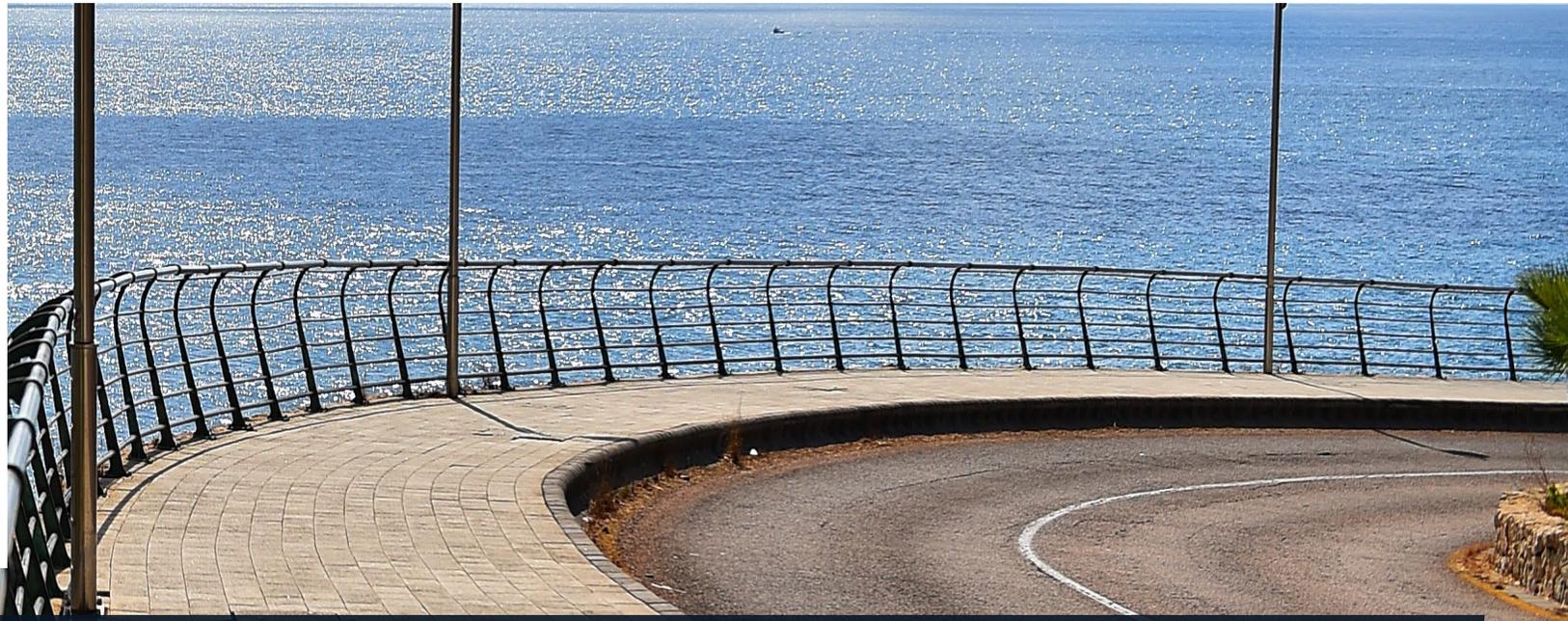
⁷ <https://www.occ.gov/news-issuances/speeches/2021/pub-speech-2021-116.pdf>

exercise and urged bank board members to push senior management to understand the implications of climate scenario analysis focusing on the longer time horizons and the exploratory nature of climate scenarios.

- **Banks are currently focusing scenario efforts on physical risk over transition risk:** Of the banks performing scenario analysis, 44% have focused on physical risk, relative to 13% that have analyzed transition risk. Another 13% of banks have developed integrated scenarios, including both physical and transition risk considerations to account for short-term and longer-term horizons.
- **Banks are focusing on their retail and commercial lending portfolios:** Two-thirds of banks are currently assessing climate-related impacts to their lending portfolios, of which 34% are focused on the wholesale lending portfolio, 28% are focused on the retail portfolio and 28% are still developing an approach. From a climate risk perspective, banks have generally focused on transition risks for the wholesale business while examining physical risk vulnerabilities to their retail mortgage portfolios.
- **Granularity and coverages vary:** The assessed impact from climate-related risks to a bank portfolio will not be equal and will be amplified by the sophistication of their modeling capabilities and scenario analysis results. Of the banks surveyed, there are differing approaches. Nine percent conducted scenario analysis at the sectoral level, 23% evaluated the industry level (e.g., upstream) and 18% evaluated counterparty-level impacts of climate change. From a coverage perspective, 15% of banks expect to achieve greater than 50% coverage of their lending portfolio within their climate risk scenario by the end of 2022.

Call to action

- ▶ Banks should develop robust climate-impact assessment capabilities over longer-dated horizons.
- ▶ Banks should prioritize risk types with more significant climate impact implications (e.g., credit risk, market risk and operational risk) and material portfolios.
- ▶ Banks should take a multi-generational approach for a variety of use cases and formulate a strategy to engage internal and external stakeholders with diverse experiences and skill sets, including climate science and other environmental-related expertise.



Data

Data will be a key differentiator to properly managing climate risks and selectively identifying climate opportunities. The banking industry is in the early stages of sourcing, understanding and analyzing climate data. Of the four key topics covered in the survey, data was the most nascent; however, it was acknowledged by participants as the foundation to embedding climate risk into the organization, across the three lines of defense.

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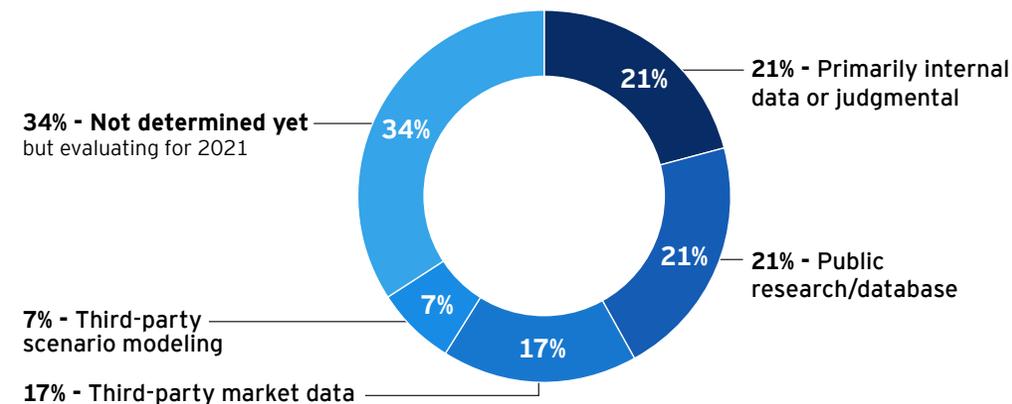
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Environmental data tends to be inconsistent and overwhelming.

Survey respondent

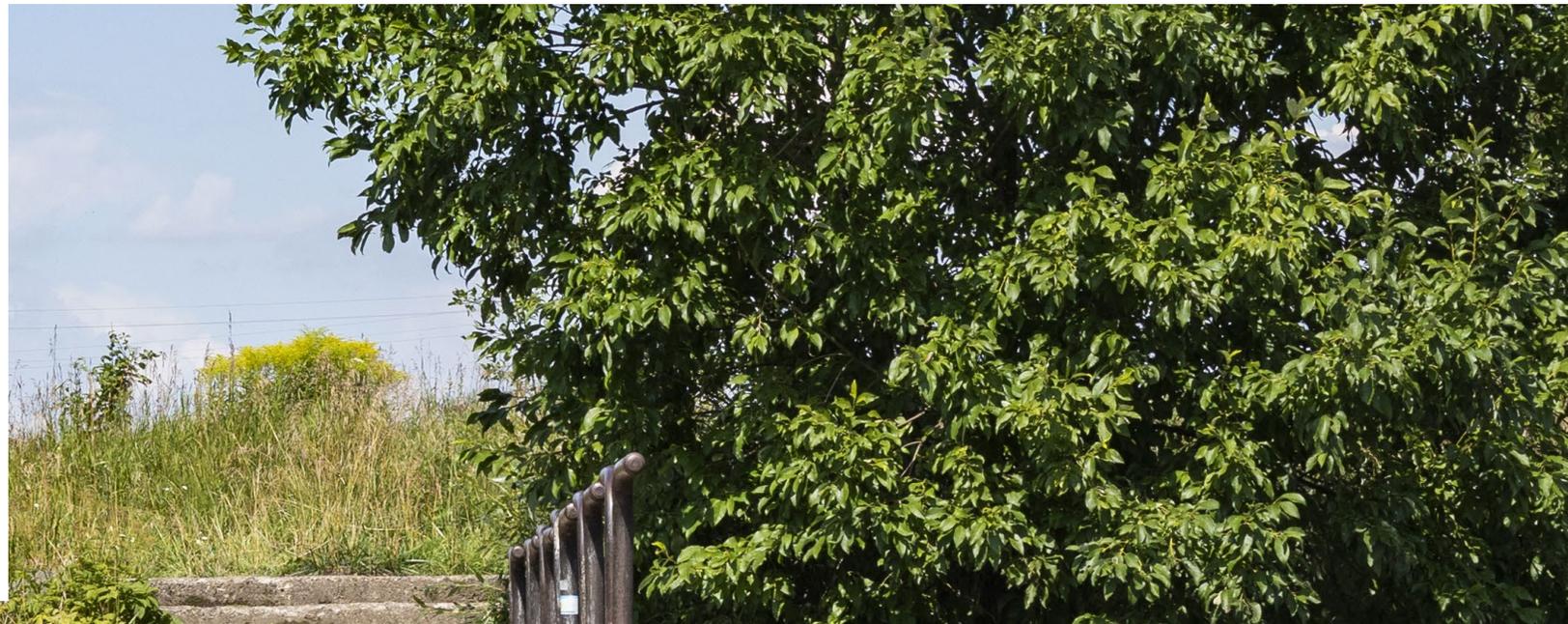
- ▶ **Banks are still formulating a climate data strategy:** A small minority, 7% of surveyed banks, consider what they had in place as a climate data strategy, while nearly 43% of bank participants do not have a data strategy and nearly 50% are still formulating an external and internal climate data strategy.
- ▶ **The vendor landscape is complex and not all methodologies are alike:** The standardization and consistency of ESG methodologies require a measured and thoughtful approach to select and apply external environmental data to the risk management framework. Nearly 60% of physical and transition risk data from banks surveyed was internal or judgmental, public, or third-party market-sourced data.
- ▶ **Transition risk data remains more difficult to source than physical risk:** Nearly 50% of banks had not determined a data-sourcing strategy to translate transition risk impacts to existing credit exposures. A number of banks cited supply chain risks and policy and technology shifts that pose significant threats to higher-emitting industries.

What data sources do you use for physical or transition risk information?



Call to action

- ▶ Banks should perform a vendor assessment to select the appropriate external partners to support them in their climate data journey.
- ▶ Banks should selectively prioritize the sourcing and use of climate data to support internal and external reporting and disclosures.
- ▶ Banks should evaluate existing processes and controls to improve data collection or weaknesses in the existing risk and control framework.
- ▶ Banks should engage clients to understand their environmental strategies and to support financial and non-financial disclosures.
- ▶ Financial institutions need to take stock of the internal data and engage their clients in gathering additional data to inform underwriting.



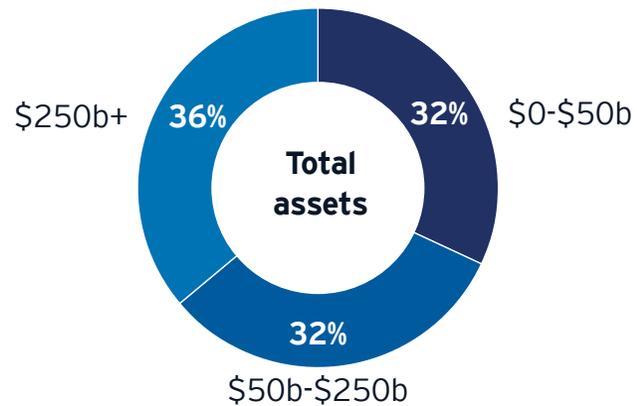
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The 2021 EY/RMA climate risk survey highlights that the banking industry is in the early stages of embedding climate risk within their organizations. Climate risk is second only to credit risk on the CRO agenda (see the [11th annual EY/IIF global bank risk management survey](#)), which will likely translate into a large effort across banks small and large to embed climate risk into the risk management framework as part of their 2022 agendas. The CRO has a generational opportunity to play a leadership role in managing climate-related risks as banks' workforces transform and new capabilities are created to identify, measure and monitor them. The CRO organization can also capitalize on these opportunities to support clients, communities and stakeholders to transition to a low-carbon economy.

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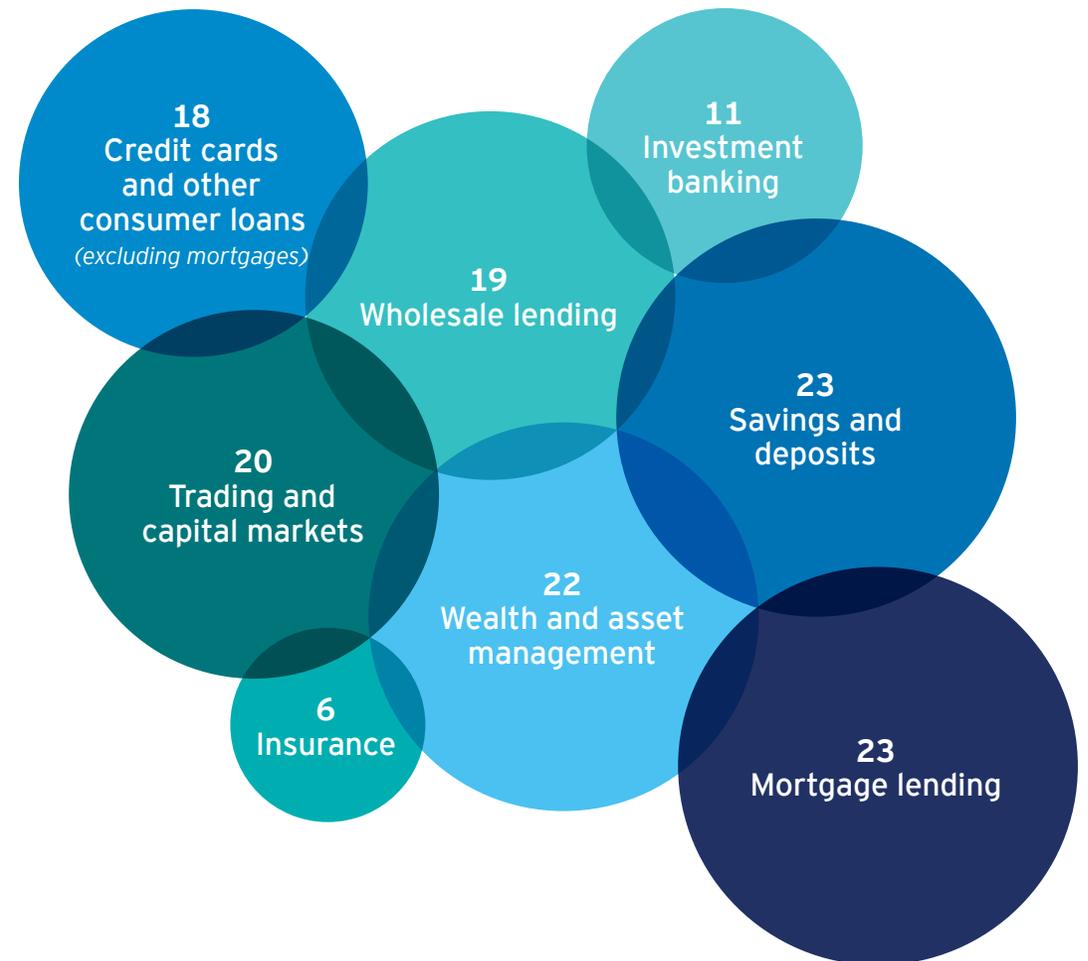
Demographics

Ernst & Young LLP and RMA conducted this survey in early 2021 and held virtual roundtable events to share and discuss the results with bank participants. In total, 28 banks participated in this survey.



Business activities

The 28 respondents provide a variety of services to clients and perform a total of 142 distinct activities.



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